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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,593	02/05/2007	Eckhard Bauer	N81813LPK	3663
1333 7590 03/02/2010 EASTMAN KODAK COMPANY PATENT LEGAL STAFF 343 STATE STREET ROCHESTER, NY 14650-2201				
EXAMINER				
HA, NGUYEN Q				
ART UNIT		PAPER NUMBER		
2854				
MAIL DATE		DELIVERY MODE		
03/02/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/581,593

Applicant(s)

BAUER ET AL.

Examiner

'Wyn' Q. HA

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

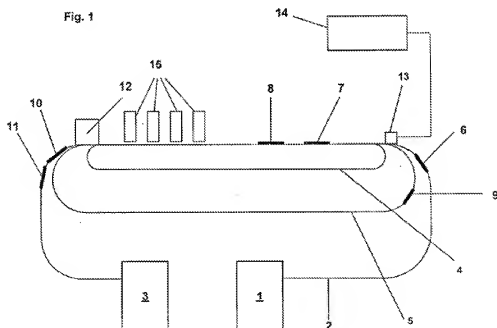
- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

An examiner's overview of the present invention

The present invention entails a method of feeding recording sheets in a printer, which comprises a continuous transport belt 4, a simplex feed path 2, and a duplex feed path 5 (Fig. 1, reproduced below). The method aims to prevent recording sheets (e.g., sheets 7 and 8) transported by the transport belt 4 from being placed at a seam of the belt 4. That is, the printer detects and determines a position of the seam of the belt 4 and controls feeding of the sheets such that the sheets (e.g., sheet 7 and 8) fed onto the belt 4 do not cover or overlap the seam of the belt 4. The method also aims to prevent the sheets from colliding with one another (in simplex printing as well as in duplex printing) while being fed onto the belt 4. Lastly, in order to achieve most efficient use of space on the belt 4, the method aims to feed the sheets onto the belt 4 such that sheet intervals between the sheets on the belt 4 are minimized.



Claim Objections

Claim 1 is objected to because of the following informalities:

In line 1, “An method” appears to contain an editorial error, and could be changed to --A method--.

In line 13, “the diverse side” appears to lack proper antecedent basis and contain an editorial error, and could be changed to --an observe side--.

In line 17, “the next free position” appears to lack proper antecedent basis, and could be changed to --a next free position--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recited subject matter “*wherein the controller checks to see if the sheet to be printed has the obverse side printed and if the result is no, the obverse side is moved to next free position, and if the result is yes, the sheet is checked to see if the reverse side is to be printed, and if the result is no the reverse side is moved to next free position, and it is checked again, if obverse side is to be printed*” was not described in the specification. Rather, the specification appears to describe a different subject matter which sets forth an algorithm for the controller to control feeding of sheets such that the sheets fed onto the transport belt 4 do not cover or overlap

the seam ("seam dead space" or "[seam_{i+1}, seam_i + σ]") of the transport belt 4, and to prevent the sheets from colliding with one another (in simplex printing as well as in duplex printing) while being fed onto the transport belt 4 (See specification page 7 line 26 – page 9 line 13). The term "next free position" as claimed appears to refer to an available space where a fed sheet can be placed on the transport belt without overlapping/colliding with another sheet. For purposes of examination, the claims are interpreted based on the subject matter described in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagatani et al. (US 6,047,148).

Nagatani teaches the following:

Claim 1:

A method of controlling the printing process for feeding sheets of printing material in a digital printing machine (Refer to fig. 4, reproduced below), having a **controller 306** ("main body controller 306") and a **continuous loop transport means 5** ("endless belt 5"), which has at least one **dead space section 5a** ("seam 5a"), which is included in a **transport path 9** ("circulation path 9") to permit an alternate selection between simplex printing and duplex printing (Col. 5 lines 42-49: "In a case where the reverse side of the paper also is to be copied or

printed for a two-sided copy, the paper is inverted at the paper inverting unit 9a...and then transported to the circulation path 9”), by taking into account that a **region**, preferably the leading edge of a respective sheet on the transport means, **is detected by a detecting device 13** (“sensor 13.” Col. 21 lines 55-60: “The timing sensor 13 is turned on when the leading edge of the supplied paper comes in contact with the timing roller 8”), **and controlled by the controller to prevent the mixing of a printing order including sheets to be duplex-printed with sheets to be simplex-printed** (Col. 8 lines 4-10: “A prescribed number of papers which can be accommodated in the circulation path 9 are supplied from the paper cassette at the same time. [Only] After images have been recorded on all of the papers currently accommodated in the circulation path 9, a new set of papers are supplied to the belt 5”) by coordinating the feeding time of the sheet to be printed on an observe side with the feeding time for the same sheet to be printed on the reverse side (Col. 12 lines 32-34; col. 13 lines 13-31; col. 16 lines 6-9);

wherein the controller to control feeding of the sheets such that sheets fed onto the belt 5 do not cover or overlap the seam 5a of the belt 5, and to prevent the sheets from colliding with one another (in simplex printing as well as in duplex printing) while being fed onto the belt 5. That is, as the examiner understands, the controller coordinates sheet feeding such that a sheet fed from a sheet supply cassette is prevented from overlapping the dead space or seam 5a on the belt 5 as well as from colliding with another sheet which is already circulated in the transport path 9 for printing an image on the reverse side (Col. 7 lines 45-59; col. 8 lines 4-10; col. 16 lines 6-9).

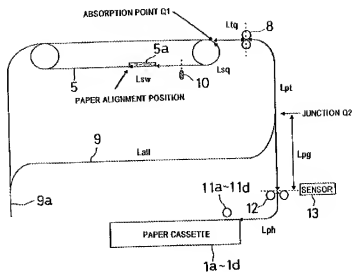


FIG. 4

Claim 3:

The method of Claim 1, wherein **when the sheet is fed for obverse printing, said sheet, or its region to be detected, is prevented from entering a section to be occupied by a sheet to be printed on a reverse side.** That is, as the examiner understands, a sheet supplied from the paper cassette for observe printing is prevented from colliding with a sheet which has been circulated in the transport path 9 for printing an image on a back face (as discussed in claim 1).

Claim 8:

The method of Claim 1, wherein the continuous transport is **a transport belt 5.**

Claim 9:

The method of Claim 1 wherein the dead space is **a seam 5a** which is included in the transport path.

Claim 10:

The method of Claim 9 wherein the transport means is (fully) loaded between the dead space section, or seams 5a, and a return after one cycle of the transport means such that any **sections to be occupied by the sheets are distributed uniformly on the transport means and any sheets between the seam and another seam receive an additional intermediate space.** That is, as the examiner understands, intervals between sheets fed onto the belt 5 are kept constant except for the interval containing the dead space or seam 5a (having two seam ends).

Col. 8 lines 36-40 & col. 9 lines 10-15: "a predetermined time interval is taken before the next paper-supply in order to maintain the paper interval constant..." Evidently, intervals between sheet fed onto the belt 5 are constant except for the interval containing the dead space or seam 5a (having two seam ends) which the sheets are prevented from occupying.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagatani in view of Takano et al. (US 6,029,041).

Claim 2:

Nagatani teaches the method of claim 1, wherein when a sheet is fed, its region to be detected is prevented from entering a dead space (inappropriate) section, or seam 5a, of the

transport belt (as discussed in claim 1). Nagatani also teaches that **a feeding time for a sheet**, which has its detectable region fall within the dead space (inappropriate) section, or seam 5a, **may be delayed by a period**, so that the recording sheet which is to be supplied does not overlap the dead space (inappropriate) section, or seam 5a, and also does not overlap an inverted recording sheet which is re-fed for transferring images on the other side thereof (Col. 2 lines 52-59). Note that Nagatani's **transport belt 5 may be driven at a constant velocity** (Col. 4 lines 52-54) and, as mentioned, a feeding time for a sheet may be delayed by a period. And, conceivably, since Nagatani would prevent the fed sheet from overlapping the seam 5a and/or a sheet to be printed on a reverse side, **either a section of the transport belt 5 occupied by the seam 5a or another section of the transport belt 5 occupied by a sheet to be printed on a reverse side would constitute a dead space (inappropriate) section for the fed sheet to avoid.**

It is not clear if Nagatani's delayed period corresponds to the size of the dead space (inappropriate) section, or seam 5a, in transport direction divided by the transport speed of the transport means (= passing by period for the dead space section, or seam 5a). That is, it is not clear if Nagatani's delayed period would correspond to a period required for the dead space (inappropriate) section, or seam 5a, to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a.

Takano teaches a method similar to Nagatani's method of feeding sheets of printing material in a printing machine (See Takano's fig. 1, reproduced below), preferably a digital printing machine, on **a continuous loop transport means 5**, in particular a transport belt 5, which has at least **one dead space section 5a** (Fig. 4, reproduced below), specifically a seam 5a,

detectable by a **seam detector 10**, and which is preferably included in a **transport path 9** (fig.

1) which permits an alternate selection between simplex printing and duplex printing (Col. 8

lines 58-61), in which case it has been taken into account that a **region**, preferably the leading

edge of a respective sheet on the transport means, **is detected** for the control of a printing process

by means of a detecting device 13 (Col. 21 lines 55-60: "The timing sensor 13 is turned on

when the leading edge of the supplied paper comes in contact with the timing roller 8"), wherein

when a sheet is fed, its region to be detected is prevented from entering the dead space

section 5a, or seam 5a, of the transport means 5 (Col. 10 lines 45-49).

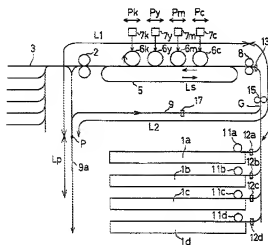


FIG. 1

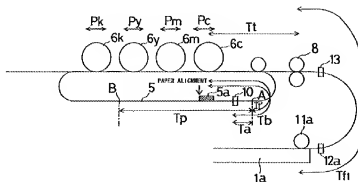


FIG. 4

Takano further teaches that, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a, driving of the transport belt may be delayed while the feeding time for a sheet may be constant... But if the transport belt were otherwise driven at a constant velocity and the feeding time for a sheet were delayed (as taught by Nagatani), then, Takano suggests, the sheet would have to wait for the dead space (inappropriate) section, or seam 5a, to pass by (Col. 24 lines 2-11); namely the feeding time for the sheet would have to be delayed by a period required for the dead space (inappropriate) section, or seam 5a, to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a.

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to have Nagatani's delayed period correspond to the size of the dead space (inappropriate) section, or seam 5a, in transport direction divided by the transport speed of the transport means. That is, the delayed period would correspond to a period required for the dead space (inappropriate) section, or seam 5a, to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section, or seam 5a, as suggested by Takano.

Claim 4 (parallel to claim 2):

Nagatani teaches the method of claim 3, wherein, in duplex printing, when the sheet is fed for obverse printing, said sheet, or its region to be detected, is prevented from entering a section to be occupied by a sheet to be printed on a reverse side. Nagatani, as discussed in claim 2 above, also teaches that **a feeding time for a sheet may be delayed by a period** so that the fed

sheet does not overlap a dead space (inappropriate) section. Further, as discussed in claim 2, a section occupied by a sheet to be printed on a reverse side would constitute a dead space (inappropriate) section. In other words, **a size of a sheet to be printed on a reverse side equals to a dead space (inappropriate) section imposed by said sheet.**

It is not clear if Nagatani's delayed period corresponds to the size of the section to be occupied by a sheet (size of the sheet) to be printed on a reverse side in transport direction divided by the transport speed of the transport means (= passing by period for the sheet to be printed on a reverse side). That is, it is not clear if Nagatani's delayed period would correspond to a period required for a sheet to be printed on a reverse side to pass by, before feeding a sheet, in order to prevent the fed sheet from overlapping the dead space (inappropriate) section imposed by the sheet to be printed on a reverse side.

Takano, as discussed in claim 2, suggests that if the transport belt were driven at a constant velocity and a feeding time for a sheet were delayed (as taught by Nagatani), the sheet would have to wait for the dead space (inappropriate) section to pass by; namely a feeding time for a sheet would have to be delayed by a period required for the dead space (inappropriate) section to pass by.

Thus, as discussed in claim 2, it would have been obvious to have Nagatani's delayed period correspond to a period required for a dead space (inappropriate) section to pass by, as suggested by Takano.

Obviously, as discussed in claim 2, in duplex printing where a section occupied by a sheet to be printed on a reverse side would constitute a dead space (inappropriate) section, Nagatani's delayed period would as well correspond to a period required for a dead space

(inappropriate) section, imposed by a sheet to be printed on a reverse side, to pass by. Therefore, since a size of a sheet to be printed on a reverse side equals to a dead space (inappropriate) section imposed by said sheet, Nagatani's delayed period would as well correspond to a period required for the sheet to be printed on a reverse side to pass by.

Claim 5:

Nagatani as modified by Takano teaches the method of claim 4, further comprising considering the section of a sheet, said **sheet's length (size) in transport direction and a required intermediate space relative to a subsequent sheet (i.e. a required sheet interval) are taken into account**.

Nagatani's col. 8 lines 36-40 and col. 9 lines 10-15: "in Step S525 which corresponds to the state counter value of 2 [paper-supply permission flag 2], a predetermined time interval is taken before the next paper-supply in order to maintain the paper interval constant...The timer is used to keep a correct paper interval between the current paper and the next paper. The paper interval is determined based on the paper size."

Takano's Col. 10 lines 47-49: "This paper-feed timing is determined based on the position of the seam and the paper size." Col. 13 lines 13- 31: "The paper-supply interval must be controlled during the imaging on the print surface."

Claim 6:

Nagatani as modified by Takano teaches the method of claim 5, further characterized in that a **space ($T\beta$, $T\phi$) for register marks** (See Takano's fig. 5, reproduced below) on the transport belt 5 to be taken into account (Takano's col. 11 lines 28-50).

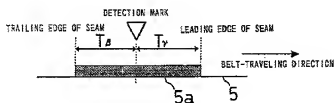


FIG.5

Claim 7:

Nagatani as modified by Takano teaches the method of Claim 6, further comprising considering the section of a sheet, in addition, **the length of time multiplied by the transport speed (= distance), which requires a set-up of the printing machine for said sheet's preparation or said machine's resetting in response to control information for its function as part of the printing process, is taken into consideration.** That is, as the examiner understands, Nagatani's printing machine is set up with a distance Lpg (Nagatani's fig. 4) for transporting a sheet fed from a sheet supply cassette as part of the printing process. The distance Lpg is taken into consideration to prevent the fed sheet from overlapping the dead space or seam 5a and from colliding with a sheet which is already circulated in the transport path 9 for recording an image on a reverse side (Col. 10 line 9 – col. 11 line 61).

Response to Arguments

Since Applicant has not provided any substantive argument as to why Nagatani or Nagatani in view of Takano would not teach the claimed invention, the examiner cannot provide further response or comments as to the validity of the above rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to 'Wyn' Q. HA whose telephone number is (571)272-2863. The examiner can normally be reached on Monday - Friday, from 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NQH
March 1, 2010

/Daniel J. Colilla/
Primary Examiner
Art Unit 2854